Check List 8(4): 709–711, 2012
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ISSN 1809-127X (available at *www.checklist.org.br*)

Check List
Journal of species lists and distribution

LISTS OF SPECIES

Lepidoptera on the introduced *Robinia pseudoacacia* in Slovakia, Central Europe

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ABSTRACT: A current checklist of Lepidoptera that utilize *Robinia pseudoacacia* as a hostplant in Slovakia (Central Europe) is provided. The inventory is based on a bibliographic review and new unreported data from southwest Slovakia. The list includes 35 Lepidoptera species belonging to 10 families. Most species are polyphagous and belong to Euro-Siberian faunal community. Two monophagous species, the leaf miners *Macrosaccus robiniella* and *Parectopa robiniella*, and the polyphagous pest *Hyphantria cunea* have subsequently been introduced to Slovakia.

INTRODUCTION

Robinia pseudoacacia L. (black locust, or false acacia), is a widespread species in its native habitat in southeastern North America. It was introduced to Europe in 1601 (Chapman 1935). The first mention of planting the species in Slovakia dates from 1750, when black locust was planted around the fortress in Komárno in southern Slovakia (Keresztesi 1965). Today, it is widespread throughout western, central, eastern and southern Europe, where it has become a major invasive species with significant impacts to the native plant communities.

Phytophagous insects associated with *Robinia pseudoacacia* are not well documented for Europe.

The purpose of this paper is to summarize the available information on Lepidoptera that utilize *Robinia pseudoacacia* as a hostplant.

MATERIALS AND METHODS

The list is partially based on published information of the region: Kulfan 1989a; 1991; Sedláček 1991; Reiprich 1993; Bělín 1999; Kudrna and Belicek 2005; Kollár and Bakay 2010 including additional work concerning the significant lepidopterous leaf miners of *Robinia pseudoacacia* by the gracillarids - *Macrosaccus robiniella* and *Parectopa robiniella* that was reported by Kulfan 1989a, b; 1991; Balázs *et al.* 2001; Csóka 2003; Gregorová 2006; Holec *et al.* 2009; Kollár and Bakay 2010 and their parasitoids (Csóka *et al.* 2003; Csóka *et al.* 2009a, b; Kulfan 1991 and Kollár and Bakay 2010). These reports included findings of several other Lepidoptera on *Robinia pseudoacacia* that are not leaf miners.

More recent information includes new unreported data from southwest Slovakia gathered during the growing season of June to October, 2004. Caterpillars were hand collected by beating *Robinia pseudoacacia* branches from a height of approximately 0.5 to 2 meters above a ground sheet. The study areas consisted of 13 study plots, located between the coordinates 47°46' - 48°45' N, 16°58' - 19°14' E. The area is a polygon enclosed by the towns of Bratislava, Komárno, Veľký Krtíš and Myjava. Ten plots were located in the southern part of the study area. Most were located in the remnant of the original floodplain forests that were distributed along the Danube and Morava rivers.

The trophic groups of the Lepidoptera larvae found were defined following the system of Brown and Hyman (1986). The zoogeographical distribution of the species follows the arrangement give by Reiprich (2001). The taxonomy and nomenclature of Lepidoptera takes into account the most recent systematic classifications in Europe: Karsholt and Nieukerken 2011, van Nieukerken *et al.* 2011, Laštůvka and Liška 2011.

Voucher specimens (in ethanol) are deposited at the Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia.

RESULTS AND DISCUSSION

Table 1 presents the list of larval stages of species of Lepidoptera living in the crowns of *Robinia pseudoacacia*. Besides the 35 Lepidoptera species listed in the Table 1, it is quite likely that *Robinia pseudoacacia* is a potential host plant of at least other 8 species in Slovakia: the xylophagous species *Zeuzera pyrina* (Linnaeus, 1761) Cossidae; the rotten wood species *Batia lambdella* (Donovan, 1793), *Crassa unitella* (Hübner, 1796), *Epicallima formosella* (Denis and Schiffermüller, 1775) and *Dasycera oliviella* (Fabricius, 1794) all Oecophoridae; the lichen- feeding species *Bisigna procerella* (Denis and Schiffermüller, 1775) Oecophoridae; the fructivorous species *Etiella zinckenella* (Treitschke, 1832) Pyralidae; and leaf-feeding species *Clepsis pallidana* (Fabricius, 1776) family Tortricidae (Reiprich 2001).

The vast majority of species given in Table 1 are polyphagous, having extended their host ranges after the *Robinia pseudoacacia* was introduced to Europe and Slovakia. Two monophagous species, the leaf miners *Macrosaccus robiniella* and *Parectopa robiniella* and

important polyphagous pest *Hyphantria cunea* have subsequently been introduced to Slovakia (Patočka and Kulfan 2009). Most species belong to Euro-Siberian faunal community (Table 1).

Neptis sappho, in past known as feeding on *Lathyrus* plants, has been adapted on the introduced *Robinia pseudoacacia* in Central Europe since the half of the 20th century (Sedláček 1991; Bělín 1999; Jutzeler et al. 2000; Kudrna and Belicek 2005).

Despite the large number of polyphagous species of Lepidoptera and the long period after the introduction of *Robinia pseudoacacia* in Slovakia, so far only a few native lepidopteran species have been adapted to it. By comparison with the new world, the comprehensive recent inventory of Argentine Lepidoptera by Pastrana (2004) lists only 15 Robinia feeders.

Table 1. Lepidoptera found on *Robinia pseudoacacia* in Slovakia (records with first author to record the species on *Robinia pseudoacacia*). Literature records: KU89 – Kulfan (1989a); KU91 – Kulfan (1991); SE91 – Sedláček (1991), Bělín (1999), Kudrna and Belicek (2005); RH93 – Reiprich (1993); KO10 – Kollár and Bakay (2010). Unpublished records: KU04 – data obtained in 2004. Trophic groups: S1 – monophagous species, S2 – narrow oligophags, G – generalist. Faunal elements: ES – Euro-Siberian, OR – Oriental, HO – Holarctic, EU – European, ME – Mediterranean, NE – Neotropical.

FAMILY	SPECIES	LITERATURE RECORDS	TROPHIC GROUPS	FAUNAL ELEMENT
Psychidae	*Apterona helicoidella* (Vallot, 1827)	KU91	G	OR
	Psyche casta (Pallas, 1767)	KU91	G	ME
	Sterrhopterix fusca (Haworth, 1809)	KU91	G	ES
Gracillariidae	*Macrosaccus robiniella* (Clemens, 1859)	RH93	S1	NE
	Parectopa robiniella Clemens, 1863	KU89	S1	NE
Chimabachidae	*Diurnea fagella* ([Schiffermüller], 1775)	KU04	G	EU
	Orthotaenia undulana ([Schiffermüller], 1775)	KU91	G	OR
Nymphalidae	*Neptis sappho* (Pallas, 1771)	SE91	S2	ES
Pyralidae	*Sitochroa verticalis* (Linnaeus, 1758)	KU91	G	ES
Lasiocampidae	*Lasiocampa quercus* (Linnaeus, 1758)	KU91	G	ES
Geometridae	*Agriopis aurantiaria* (Hübner, 1799)	KU91	G	OR
	Agriopis marginaria (Fabricius, 1776)	KU04	G	OR
	Alcis repandata (Linnaeus, 1758)	KU04	G	ES
	Ascotis selenaria ([Schiffermüller], 1775)	KU04	G	ES
	Biston betularia (Linnaeus, 1758)	KU91	G	ES
	Biston strataria (Hufnagel, 1767)	KU04	G	ME
	Campaea margaritaria (Linnaeus, 1761)	KO10	G	OR
	Ectropis crepuscularia ([Schiffermüller], 1775)	KU91	G	EU
	Ematurga atomaria (Linnaeus, 1758)	KU91	G	ES
	Hypomecis punctinalis (Scopoli, 1763)	KU91	G	ES
	Lycia hirtaria (Clerck, 1759)	KU91	G	ES
	Macaria alternata ([Schiffermüller], 1775)	KU91	G	ES
	Phigalia pilosaria (Denis and Schiffermüller, 1775)	KU04	G	ES
Notodontidae	*Pterostoma palpina* (Clerck, 1759)	KU91	G	ES
Erebidae	*Calliteara pudibunda* (Linnaeus, 1758)	KU91	G	ES
	Hyphantria cunea (Drury, 1773)	KU91	G	NE
	Lymantria dispar (Linnaeus, 1758)	KU91	G	ES
	Orgyia antiqua (Linnaeus, 1758)	KU91	G	HO
	Orgyia recens (Hübner, 1819)	KU91	G	ES
Noctuidae	*Acronicta rumicis* (Linnaeus, 1758)	KU91	G	ES
	Egira conspicillaris (Linnaeus, 1758)	KU91	G	OR
	Lacanobia w-latinum (Hufnagel, 1766)	KU91	G	HO
	Orthosia cerasi (Fabricius, 1775)	KU91	G	ES
	Orthosia gracilis ([Schiffermüller], 1775)	KU91	G	ES
	Orthosia incerta (Hufnagel, 1766)	KU91	G	HO

Acknowledgments: This work was supported by the Slovak Grant Agency for science VEGA (Grants No 1/0124/09 and 1/0137/11).

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RECEIVED: March 2012
ACCEPTED: June 2012
PUBLISHED ONLINE: August 2012
EDITORIAL RESPONSIBILITY: Rodrigo M. Feitosa